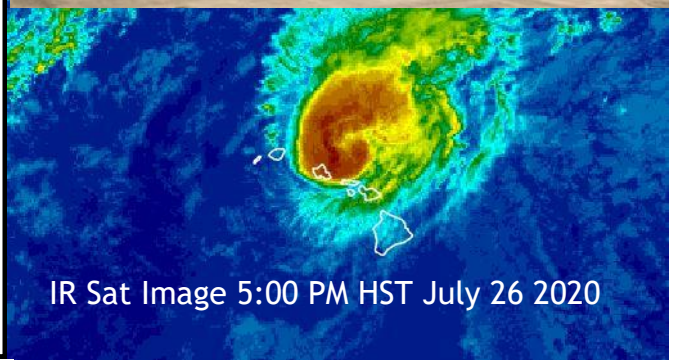
Hawai'i Ho'ohekili

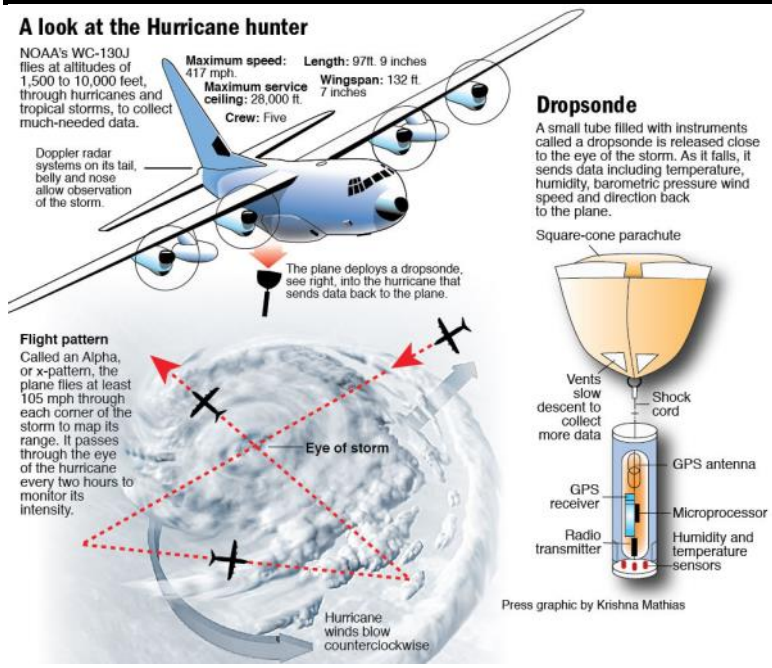
Skywarn Weather Spotter Newsletter
National Weather Service, Honolulu, HI

Wet Season Edition, 2020 | Issued — October 2020 | Spotter Newsletter Volume 20

Inside this edition: Close call with Hurricane Douglas, New Statewide Surf Product, September Hawaii Drought Monitor, and an ENSO Update!!

- Hurricane Douglas came very close to the islands as it passed north of the state this summer.
- On July 26, 2020 at 5 PM HST Douglas came within 60 miles NE of Honolulu!
- The Air Force 53rd Weather Reconnaissance Squadron was sampling the system as it made its approach to the islands. The real-time data provided by the aircraft gave our Central Pacific Hurricane Center essential information used by our Hurricane Specialist.
- The low-level ridge to the north was providing significant steering to Douglas.
- A weakness in the ridge aloft and increasing vertical wind shear, mainly at higher levels, likely caused the hurricane to make a northward shift.


IR Sat Image 5:00 PM HST July 26 2020



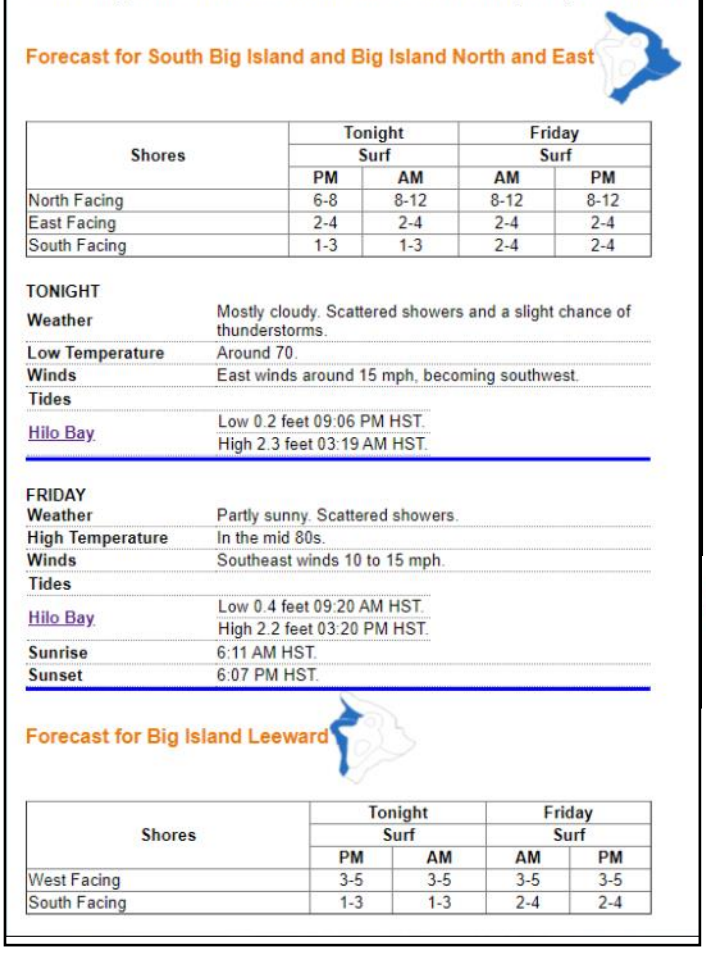
Flight Path

During a single mission, hurricane hunters might fly through the eye and eyewall several times.

New Format to our Surf Forecast

On September 10, 2020 the NWS Honolulu office began issuing a new statewide surf forecast.

Our surf forecast provides valuable and life-saving information about hazards in the surf zone to all populations along the beach. This includes not only the public but providers of beach safety services such as lifeguards.



Forecast for South Big Island and Big Island North and East

Shores	Tonight Surf		Friday Surf	
	PM	AM	AM	PM
North Facing	6-8	8-12	8-12	8-12
East Facing	2-4	2-4	2-4	2-4
South Facing	1-3	1-3	2-4	2-4

TONIGHT

Weather	Mostly cloudy. Scattered showers and a slight chance of thunderstorms.
Low Temperature	Around 70.
Winds	East winds around 15 mph, becoming southwest.
Tides	
Hilo Bay	Low 0.2 feet 09:06 PM HST. High 2.3 feet 03:19 AM HST.

FRIDAY

Weather	Partly sunny. Scattered showers.
High Temperature	In the mid 80s.
Winds	Southeast winds 10 to 15 mph.
Tides	
Hilo Bay	Low 0.4 feet 09:20 AM HST. High 2.2 feet 03:20 PM HST.
Sunrise	6:11 AM HST.
Sunset	6:07 PM HST.

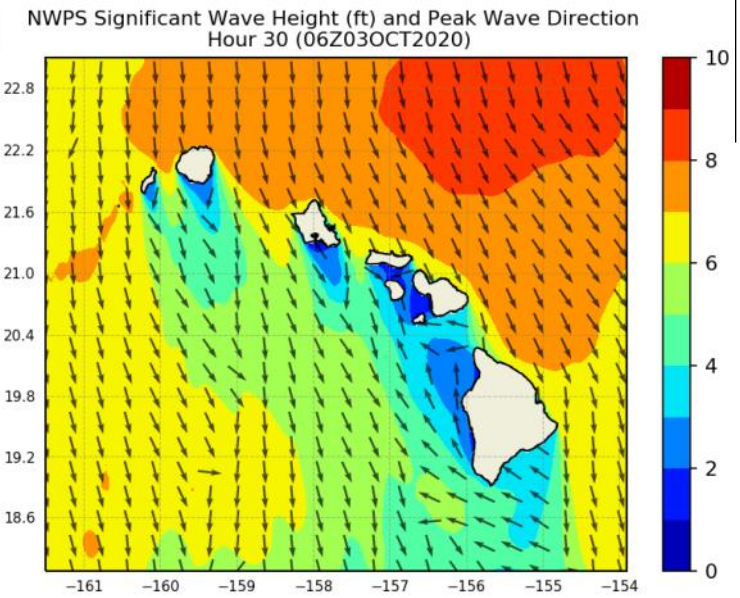
Forecast for Big Island Leeward

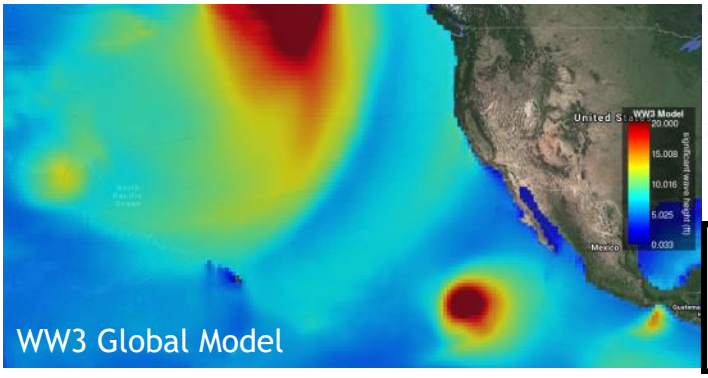
Shores	Tonight Surf		Friday Surf	
	PM	AM	AM	PM
West Facing	3-5	3-5	3-5	3-5
South Facing	1-3	1-3	2-4	2-4

To find this product you can visit:

https://www.weather.gov/hfo/SRF

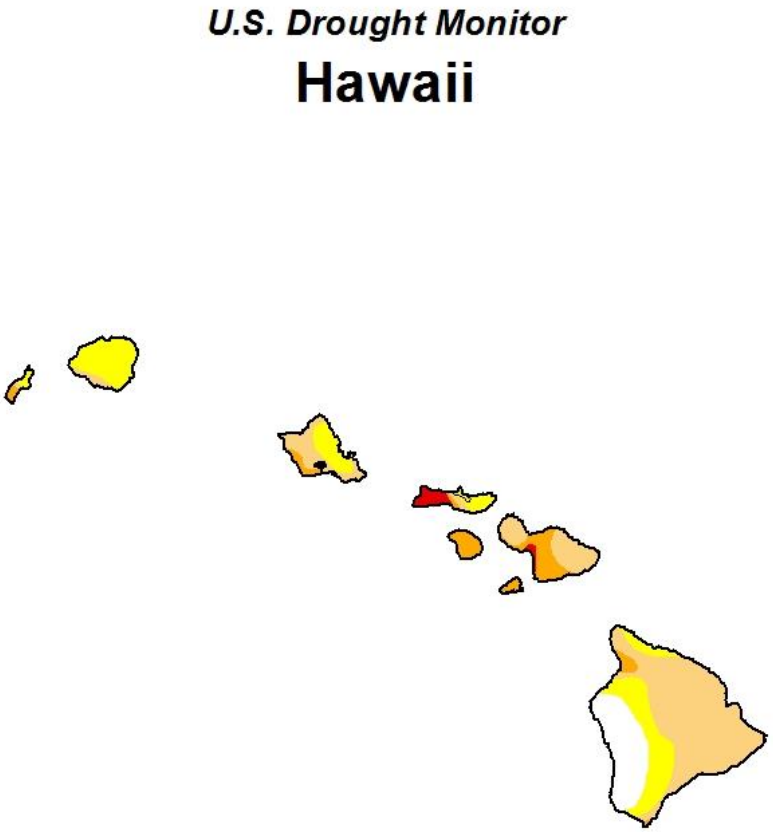
- The surf forecast has been expanded to include shorelines of the entire state.
- In addition to surf, the new format includes weather, winds, temperatures, tides, and sunrise/sunset information.
- We use multi-resolution wave models to help us hone in the surf forecast including the global Wave Watch III model and the higher resolution Nearshore Wave Prediction System (NWPS).





‘Olelo No’Eau

Hawaiian Proverb:”Ola ika wai a ka ‘ōpua”
English: There is life in the water from the clouds.
Explanation: Rain gives life.



September 22, 2020
(Released Thursday, Sep. 24, 2020)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	13.46	86.54	60.57	12.53	2.25	0.00
Last Week 09-15-2020	24.90	75.10	49.57	10.58	1.42	0.00
3 Months Ago 06-23-2020	33.75	66.25	19.97	2.82	0.00	0.00
Start of Calendar Year 12-31-2019	36.78	63.22	17.58	6.66	0.99	0.22
Start of Water Year 10-01-2019	62.03	37.97	17.85	6.15	1.55	0.00
One Year Ago 09-24-2019	62.03	37.97	17.85	6.15	1.52	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

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droughtmonitor.unl.edu

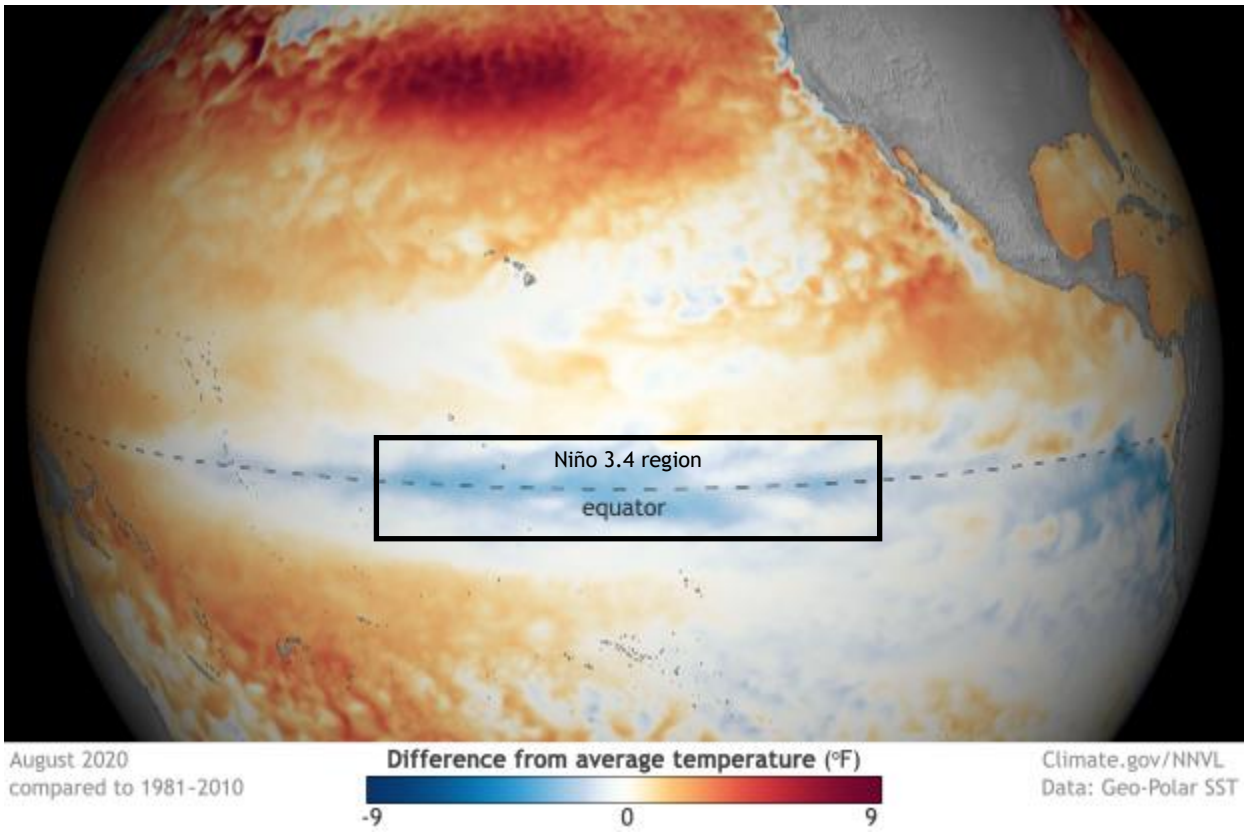
DROUGHT WORSENS ACROSS THE MAIN HAWAIIAN ISLANDS Kevin Kodama—Senior Hydrologist

.SYNOPSIS: Issued Sept 9, 2020
Dry conditions during August reversed improvements in drought that occurred during July. The worst drought conditions were in Maui County, where severe drought, or the D2 category in the U.S. Drought Monitor map, covered portions of Maui, Molokai, Lanai, and Kahoolawe. These conditions are not expected to improve in the near term and may soon transition to extreme drought, or the D3 category.

On the Big Island, below normal trade wind rainfall resulted in moderate drought spreading into the windward slopes from Laupahoehoe to Kilauea volcano. Moderate drought also covered most of the Big Island`s South Kohala District and the leeward portions of the North Kohala District. Elsewhere in the state, moderate drought on Oahu increased in coverage during the past month and now covers the southwestern half of the island. Kauai has been the least impacted by drought this summer but recently has trended toward moderate drought over the leeward side of the island.

.DROUGHT MITIGATION ACTIONS:
The U.S. Dept of Agriculture declared Hawaii County and Maui County as Primary Natural Disaster Areas in March 2020. The declaration allows the Farm Service Agency to extend emergency credit to producers affected by drought conditions during recent months. The Maui County Department of Water Supply declared a Stage 1 Water Shortage for Upcountry and West Maui on September 1. Reservoir levels have steadily dropped over the past month. The declaration requests residents in the affected areas to cut back on non-essential water use until further notice.

.LOCAL DROUGHT OUTLOOK:
The Long-Lead Hawaiian Islands Outlook issued on August 20 by the NOAA Climate Prediction Center shows probabilities favoring below normal rainfall during the early fall of 2020. Rainfall should continue to favor the east-facing windward slopes, with leeward areas becoming drier. The outlook projects a transition to above normal rainfall in late 2020. Probabilities continue to favor above normal temperatures across the state through the rest of 2020 and into early 2021 due to the forecast of above average sea surface temperatures around the Hawaiian Islands. Based on the forecast, and barring any tropical cyclone near passes or direct hits, leeward dryness will likely persist, resulting in a potential worsening and expansion of current drought areas across the state into early fall before easing late in 2020.

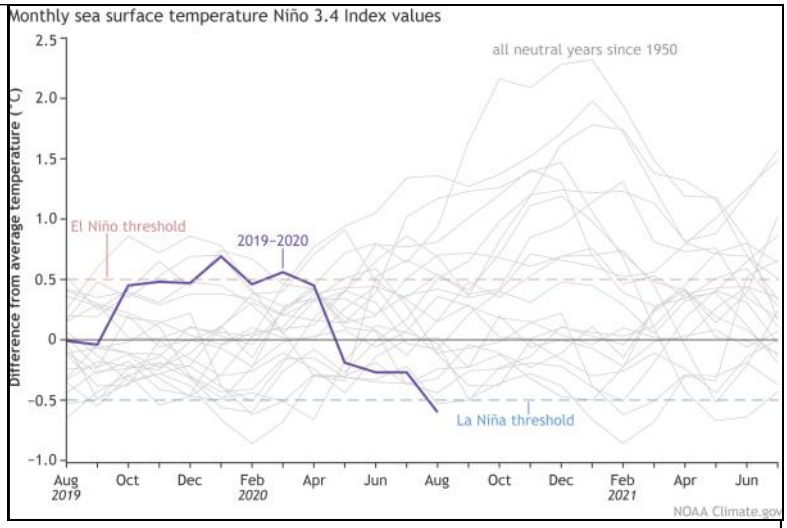


September 2020 ENSO Update

La Niña conditions were present in August, and there's a 75% chance they'll hang around through the winter. NOAA has issued a La Niña Advisory. Just how did we arrive at this conclusion, and what does a La Niña winter portend? Read on to find out!

The first question and answer is, "Is the monthly Niño3.4 sea surface temperature anomaly equal to or less than -0.5°C?" is an easy "yes." August's value was -0.6°C according to our most consistent sea surface temperature dataset, the ERSSTv5.

The second step is "Do you think it will stay more than half a degree cooler than average for the next several months?" and again, the answer is "yes." Most of the dynamical computer models predict that the sea surface temperature will remain below the La Niña threshold of -0.5°C through the winter.



Monthly sea surface temperature in the Niño 3.4 region of the tropical Pacific for 2019-2020 (purple line) and all other years starting from neutral winters since 1950. Climate.gov graph based on ERSSTv5 temperature data.

Now, on to the critical third step: "Is the atmosphere showing signs of a response to the cooler-than-average sea surface?" Another "yes!" La Niña intensifies the contrast between the warm far western Pacific and much cooler eastern Pacific, and so La Niña's atmospheric response is a strengthening of the Walker circulation. This large-scale circulation pattern is characterized by air rising over the very warm waters of the far western Pacific and Indonesia, traveling eastward high in the atmosphere, sinking over the eastern Pacific, and traveling back westward near the surface.

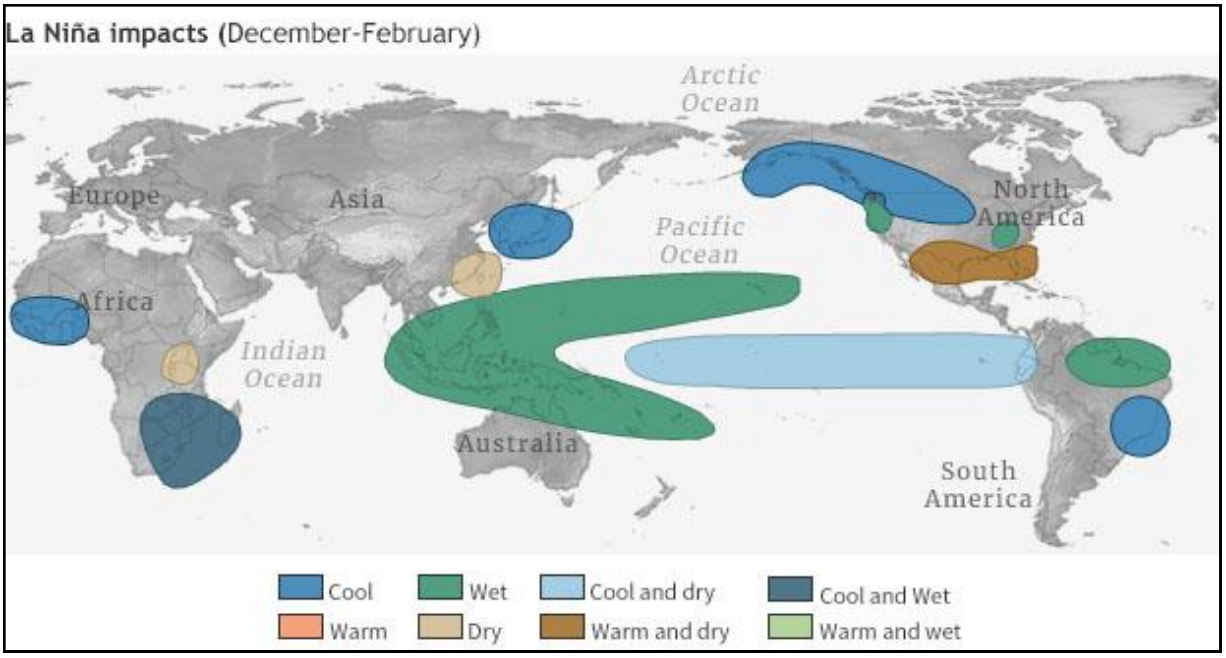
When the Walker circulation is stronger than average, the trade winds are stronger, which we observed in the end of August and early September. More rising air over the far western Pacific means lower air pressure, while descending air over the eastern Pacific means higher air pressure; the contrast between these two arms of the Walker circulation is measured using the Southern Oscillation Index and the Equatorial Southern Oscillation Index. Both indexes were positive in August, at 1.1 and 1.0 respectively. These values, which are in the top 20% of the 1950-present record, indicate a stronger-than-average Walker circulation.

(Discussion issued by CPC, and the ENSO blog from NOAA.)

La Niña impacts

La Niña's altered atmospheric circulation over the Pacific Ocean affects global weather and climate. While every ENSO event (and every winter!) is different, La Niña can make certain outcomes more likely. This includes more rain than average through Indonesia and stretching to Hawaii, cooler and wetter weather in southern Africa, and drier weather in southeastern China, among other impacts.

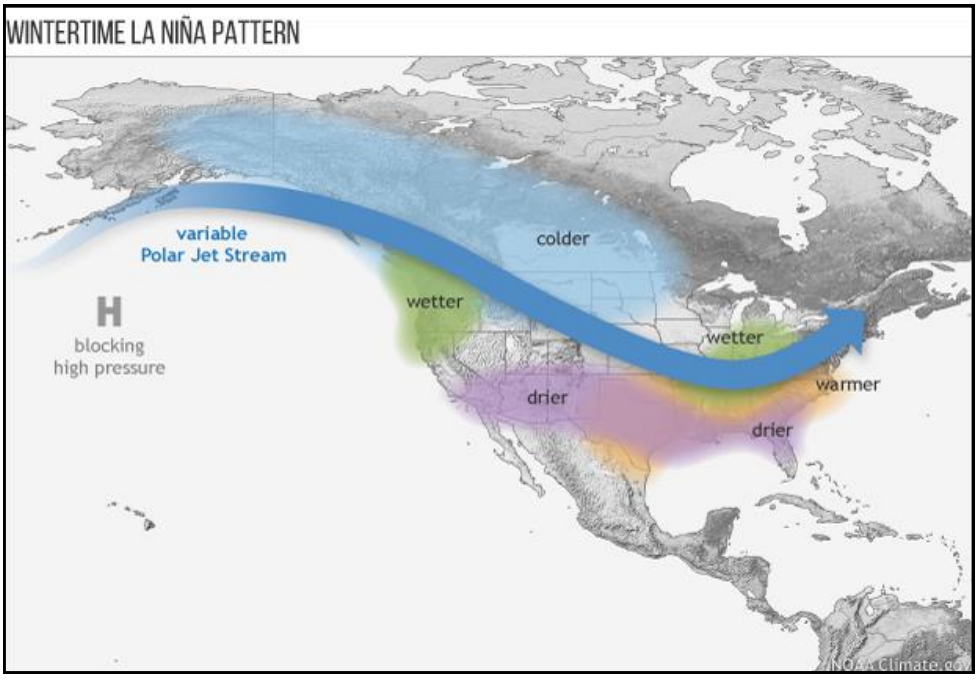
One important global impact of La Niña is its effect on the Atlantic hurricane season. La Niña reduces wind shear—the change in winds between the surface and the upper levels of the atmosphere—allowing hurricanes to grow. The likelihood of La Niña was factored into NOAA's August outlook for the Atlantic hurricane season, which favored an "extremely active" season. As of September 8th, we have seen 17 named storms so far this season, and the forecast is for a total of 19-25 named storms (the hurricane season ends on Nov. 30th).



Typical winter (December–February) temperature and precipitation impacts from La Niña. Map by climate.gov.

La Niña affects US weather through its impact on the Asia-North Pacific jet stream, which is retracted to the west during a La Niña winter and often shifted northward of its average position. Generally, La Niña winters in the southern tier of the US tend to be warmer and drier, while the northern tier and Canada tend to be colder. Official seasonal outlooks are available from the Climate Prediction Center.

(Discussion issued by CPC, and the ENSO blog from NOAA.)



Average location of the jet stream and typical temperature and precipitation impacts during La Niña winter over North America. Map by Fiona Martin for NOAA Climate.gov.